UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/580,622	05/24/2006	Christopher Patrick	040132	4386

23696 7590 10/08/2008

QUALCOMM INCORPORATED
5775 MOREHOUSE DR.
SAN DIEGO, CA 92121

EXAMINER	
HERRERA, DIEGO D	
ART UNIT	**PAPER NUMBER**
2617	

NOTIFICATION DATE	DELIVERY MODE
10/08/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

us-docketing@qualcomm.com
kascanla@qualcomm.com
nanm@qualcomm.com

Office Action Summary	Application No.	Applicant(s)	
	10/580,622	PATRICK, CHRISTOPHER	
	Examiner	**Art Unit**	
	DIEGO HERRERA	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *5/24/2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-64* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-64* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *24 May 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Priority

Applicant's claim for the benefit of a prior-filed application under 35 U.S.C. 119(e) or under 35 U.S.C. 120, 121, or 365(c) is acknowledged.

Oath/Declaration

The oath lacks the statement of venue. Applicant is required to furnish either a new oath or declaration in proper form, identifying the application by application number and filing date, or a certificate by the officer before whom the original oath was taken stating that the oath was executed within the jurisdiction of the officer before whom the oath was taken when the oath was administered. The new oath or declaration must properly identify the application of which it is to form a part, preferably by application number and filing date in the body of the oath or declaration. See MPEP §§ 602.01 and 602.02.

Specification

The abstract of the disclosure does not commence on a separate sheet in accordance with 37 CFR 1.52(b)(4). A new abstract of the disclosure is required and must be presented on a separate sheet, apart from any other text.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the

applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3, 5-6, 9-10, 14, 16-17, 19-27, 31-32, 35-36, 39, 41-43, 45, 48-49, 52, and 54-64 rejected under 35 U.S.C. 102(e) as being anticipated by Stein et al. (US 20030008669 A1).

Regarding claim 1. Stein discloses a method for calculating an estimate of the position of a mobile station (abstract, title, fig. 1a, ¶: 20, Stein teaches method for calculating position of a mobile station), comprising:

collecting in a mobile station, position estimate information (PEI) transmitted by a location node (fig. 1a-7, abstract, title, ¶: 135, Stein teaches receives signals from GPS satellites, base stations, and/or repeaters);

generating in the mobile station, PEI parameters based upon the PEI, wherein the PEI parameters include information from which the location node can be uniquely located or identified (abstract, title, ¶: 138, Stein teaches the measurements and identifier PN's are provided to a TX data processor 742 for transmission back to the PDE, which uses the information to determine the position of terminal 106x); and

sending the PEI parameters from the mobile station to a position determination entity, wherein the PEI parameters permit calculation of the position estimate (¶: 138, Stein also discloses the controller 730 receives the measurements for the base stations and/or GPS satellites, the PN sequences for the base stations, the identifier PN's of the repeaters, the estimated signal quality of the received signals, or any combination thereof).

Regarding claim 27. Stein discloses a method for calculating a position estimate of a mobile station which has generated position estimate information (PEI) parameters based upon PEI transmitted by a location node (fig. 1a-7, abstract, title, ¶: 135, Stein teaches receives signals from GPS satellites, base stations, and/or repeaters), the method comprising:

receiving in a position determination entity, the PEI parameters which have been sent by the mobile station (abstract, title, ¶: 143, Stein teaches the PDE 130 receives the reverse modulated signal from the terminal and it is processed by transceiver 814 to provide samples), the PEI parameters including information from which the location node can be located or identified (abstract, title, ¶: 143, Stein teaches also to a RX data processor 822 to recover the data transmitted by the terminal which may include any combination of measurements, identifier PN's reported by the terminal); and

calculating the position estimate of the mobile station based upon the PEI parameters (abstract, title, ¶: 143, 144, Stein further discloses the data processor 822 provides the received data to controller 810 which estimates the position for the terminal based on the data from the terminal and additional data from storage unit 830).

Regarding claim 42. A system for calculating a position estimate of a mobile station, the system (¶: 20, Stein teaches method and apparatus to determine the position of a terminal communicating through a repeater in a wireless communication system) comprising:

a location node configured for transmitting position estimate information (PEI) to the mobile station (abstract, title, ¶: 138, Stein teaches the measurements and identifier

PN's are provided to a TX data processor 742 for transmission back to the PDE, which uses the information to determine the position of terminal 106x);

a position determination entity for receiving PEI parameters sent by the mobile station (abstract, title, ¶: 143, Stein teaches the PDE 130 receives the reverse modulated signal from the terminal and it is processed by transceiver 814 to provide samples), the mobile station having generated the PEI parameters based upon the PEI, and wherein the PEI parameters include information from which the location node can be located or identified (abstract, title, ¶:138, Stein teaches the controller 730 receives the measurements for the base stations and/or GPS satellites, the PN sequences for the base stations, the identifier PN's of the repeaters, the estimated signal quality of the received signals, or any combination thereof); and

a processor associated with the position determination entity, the processor calculating the position estimate of the mobile station based upon the PEI parameters (abstract, title, ¶: 138, 143, 144, Stein teaches the measurements and identifier PN's are provided to a TX data processor 742 for transmission back to the PDE, which uses the information to determine the position of terminal 106x. Stein also discloses the PDE 130 receives the reverse modulated signal from the terminal and it is processed by transceiver 814 to provide samples to a RX data processor 822 to recover the data transmitted by the terminal which may include any combination of measurements, identifier PN's reported by the terminal. Stein teaches the data processor 822 provides the received data to controller 810 which estimates the position for the terminal based on the data from the terminal and additional data from storage unit 830).

Regarding claim 62. Stein discloses a computer readable medium containing instructions for controlling a computer which calculates a position estimate of a mobile station (¶: 20, Stein teaches method and apparatus to determine the position of a terminal communicating through a repeater in a wireless communication system) according to a method comprising:

collecting in the mobile station position estimate information (PEI) transmitted by a location node (abstract, title, ¶: 138, Stein teaches the measurements and identifier PN's are provided to a TX data processor 742 for transmission back to the PDE, which uses the information to determine the position of terminal 106x);

generating in the mobile station PEI parameters based upon the PEI, wherein the PEI parameters include information from which the location node can be located or identified (abstract, title, ¶: 138, Stein teaches the measurements and identifier PN's are provided to a TX data processor 742 for transmission back to the PDE, which uses the information to determine the position of terminal 106x); and

sending the PEI parameters from the mobile station to a position determination entity (abstract, title, ¶: 143, Stein teaches also to a RX data processor 822 to recover the data transmitted by the terminal which may include any combination of measurements, identifier PN's reported by the terminal), wherein the PEI parameters permit calculation of the position estimate of the mobile station (abstract, title, ¶: 143, 144, Stein further discloses the data processor 822 provides the received data to controller 810 which estimates the position for the terminal based on the data from the terminal and additional data from storage unit 830).

Regarding claim 63. Stein discloses a computer readable medium containing instructions for controlling a computer for calculating a position estimate of a mobile station, the mobile station having generated position estimate information (PEI) parameters based upon PEI transmitted by a location node (¶: 20, Stein teaches method and apparatus to determine the position of a terminal communicating through a repeater in a wireless communication system), the computer calculating the position estimate according to a method comprising:

receiving in a position determination entity the PEI parameters which have been sent by the mobile station (abstract, title, ¶: 138, Stein teaches the controller 730 receives the measurements for the base stations and/or GPS satellites, the PN sequences for the base stations, the identifier PN's of the repeaters, the estimated signal quality of the received signals, or any combination thereof), the PEI parameters including information from which the location node can be located or identified (abstract, title, ¶: 143, Stein teaches also to a RX data processor 822 to recover the data transmitted by the terminal which may include any combination of measurements, identifier PN's reported by the terminal); and calculating the position estimate of the mobile station based upon the PEI parameters (abstract, title, ¶: 143, 144, Stein further discloses the data processor 822 provides the received data to controller 810 which estimates the position for the terminal based on the data from the terminal and additional data from storage unit 830).

Regarding claim 64. Stein discloses a system for calculating a position estimate of a mobile station (¶: 20, Stein teaches method and apparatus to determine the position of a terminal communicating through a repeater in a wireless communication system), the

system comprising:

transmitting means for transmitting position estimate information (PEI) to the mobile station (abstract, title, ¶: 138, Stein teaches the measurements and identifier PN's are provided to a TX data processor 742 for transmission back to the PDE, which uses the information to determine the position of terminal 106x);

locating means for receiving PEI parameters sent by the mobile station (abstract, title, ¶: 143, Stein teaches also to a RX data processor 822 to recover the data transmitted by the terminal which may include any combination of measurements, identifier PN's reported by the terminal), the mobile station having generated the PEI parameters based upon the PEI (¶: 20, Stein teaches method and apparatus to determine the position of a terminal communicating through a repeater in a wireless communication system), and wherein the PEI parameters include information from which the location node can be located or identified (abstract, title, ¶: 143, Stein teaches also to a RX data processor 822 to recover the data transmitted by the terminal which may include any combination of measurements, identifier PN's reported by the terminal); and

processing means associated with the locating means (abstract, title, ¶: 143, Stein teaches also to a RX data processor 822 to recover the data transmitted by the terminal which may include any combination of measurements, identifier PN's reported by the terminal), the processing means calculating the position estimate of the mobile station based upon the PEI parameters (abstract, title, ¶: 143, 144, Stein further discloses the data processor 822 provides the received data to controller 810 which estimates the

position for the terminal based on the data from the terminal and additional data from storage unit 830).

Consider claim 2. The method according to claim 1, further comprising:

receiving in the mobile station, a location request message from the position determination entity; and

initiating the generating of the position estimate information (PEI) parameters responsive to the location request message (abstract, title, ¶: 140, Stein teaches the PDE can automatically send to the terminal a list of PN's to search including the identifier PNS, which may be used for position related calls).

Consider claim 28. The method according to claim 27, further comprising:

sending a location request message to the mobile station, causing the mobile station to send the position estimate information (PEI) parameters (abstract, title, ¶: 140, Stein teaches the PDE can automatically send to the terminal a list of PN's to search including the identifier PNS, which may be used for position related calls).

Consider claim 43. The system according to claim 42, wherein the position determination entity sends a location request message to the mobile station, causing the mobile station to generate the position estimate information (PEI) parameters (abstract, title, ¶: 140, Stein teaches the PDE can automatically send to the terminal a list of PN's to search including the identifier PNS, which may be used for position related calls).

Consider claim 3. The method according to claim 1, further comprising:

initiating the generating of the position estimate information (PEI) parameters

responsive to a location request generated by the mobile station (abstract, title, ¶: 140 the PDE can send the identifier PN's to a terminal upon request when it is known that repeaters are present and there are not enough GPS measurements to perform position determination).

Consider claim 5. The method according to claim 1, wherein the position estimate information (PEI) parameters include the time which the mobile station receives the PEI (abstract, title, ¶: 136, Stein teaches the RF receiver unit 722 may be operated to provide a controller 730 the arrival times for the strongest received multi-paths or the multi-paths having signal strengths that exceed a particular threshold).

Consider claim 6. The method according to claim 1, wherein the position estimate information (PEI) parameters indicate whether or not the mobile station is currently in view of the location node (abstract, title, ¶; 7, 135, 138, Stein teaches one or more repeaters 114 may be employed by system 100 to provide coverage for regions that would not otherwise be covered by a base station. Stein teaches a terminal 106x receives signals from GPS satellites, base stations, and/or repeaters. Stein also teaches the controller 730 receives the measurements for the base stations and/or GPS satellites, the PN sequences for the base stations, the identifier PN's of the repeaters, the estimated signal quality of the received signals, or any combination thereof).

Consider claim 31. The method according to claim 27, wherein the position estimate information (PEI) parameters indicate whether or not the mobile station is currently in view of the location node (abstract, title, ¶; 7, 135, 138, Stein teaches one or more repeaters 114 may be employed by system 100 to provide coverage for regions that

would not otherwise be covered by a base station. Stein teaches a terminal 106x receives signals from GPS satellites, base stations, and/or repeaters. Stein also teaches the controller 730 receives the measurements for the base stations and/or GPS satellites, the PN sequences for the base stations, the identifier PN's of the repeaters, the estimated signal quality of the received signals, or any combination thereof).

Consider claim 45. The system according to claim 42, wherein the position estimate information (PEI) parameters indicate whether or not the mobile station is currently in view of the location node(abstract, title, ¶; 7, 135, 138, Stein teaches one or more repeaters 114 may be employed by system 100 to provide coverage for regions that would not otherwise be covered by a base station. Stein teaches a terminal 106x receives signals from GPS satellites, base stations, and/or repeaters. Stein also teaches the controller 730 receives the measurements for the base stations and/or GPS satellites, the PN sequences for the base stations, the identifier PN's of the repeaters, the estimated signal quality of the received signals, or any combination thereof).

Consider claim 9. The method according to claim 1, wherein if the mobile station is currently in view of the location node, the position estimate information (PEI) parameters include information relating to proximity of the mobile station relative to the location node (abstract, title, ¶: 136, Stein teaches the RF receiver unit 722 may be operated to provide a controller 730 the arrival times for the strongest received multi-paths or the multi-paths having signal strengths that exceed a particular threshold).

Consider claim 35. The method according to claim 27, wherein if the mobile station is currently in view of the location node, the position estimate information (PEI)

parameters include information relating to proximity of the mobile station relative to the location node (abstract, title, ¶: 136, Stein teaches the RF receiver unit 722 may be operated to provide a controller 730 the arrival times for the strongest received multi-paths or the multi-paths having signal strengths that exceed a particular threshold).

Consider claim 48. The system according to claim 42, wherein if the mobile station is currently in view of the location node, the position estimate information (PEI) parameters include information relating to proximity of the mobile station relative to the location node (abstract, title, ¶: 136, Stein teaches the RF receiver unit 722 may be operated to provide a controller 730 the arrival times for the strongest received multi-paths or the multi-paths having signal strengths that exceed a particular threshold).

Consider claim 10. The method according to claim 9, wherein the information relating to the proximity of the mobile station relative to the location node comprises signal strength of the location node (abstract, title, ¶: 136, Stein teaches the RF receiver unit 722 may be operated to provide a controller 730 the arrival times for the strongest received multi-paths or the multi-paths having signal strengths that exceed a particular threshold).

Consider claim 36. The method according to claim 35, wherein the information relating to the proximity of the mobile station relative to the location node comprises signal strength of the location node (abstract, title, ¶: 136, Stein teaches the RF receiver unit 722 may be operated to provide a controller 730 the arrival times for the strongest received multi-paths or the multi-paths having signal strengths that exceed a particular threshold).

Consider claim 49. The system according to claim 48, wherein the information relating to the proximity of the mobile station relative to the location node comprises signal strength of the location node (abstract, title, ¶: 136, Stein teaches the RF receiver unit 722 may be operated to provide a controller 730 the arrival times for the strongest received multi-paths or the multi-paths having signal strengths that exceed a particular threshold).

Consider claim 12. The method according to claim 9, wherein the information relating to the proximity of the mobile station relative to the location node comprises a round-trip- delay (RTD) measurement (abstract, title, ¶: 18,146, Stein teaches using round trip delay (RID) measurements to locate a terminal when the terminal is in view of a repeater).

Consider claim 38. The method according to claim 35, wherein the information relating to the proximity of the mobile station relative to the location node comprises a round-trip- delay (RTD) measurement (abstract, title, ¶: 18,146, Stein teaches using round trip delay (RID) measurements to locate a terminal when the terminal is in view of a repeater).

Consider claim 51. The system according to claim 48, wherein the information relating to the proximity of the mobile station relative to the location node comprises a round-trip- delay (RTD) measurement (abstract, title, ¶: 18,146, Stein teaches using round trip delay (RID) measurements to locate a terminal when the terminal is in view of a repeater).

Consider claim 14. The method according to claim 1, wherein the position estimate information (PEI) parameters include the channel identification at which the mobile station and the location node communicate (abstract, title, ¶: 138, Stein teaches the controller 730 receives the measurements for the base stations and/or GPS satellites, the PN sequences for the base stations, the identifier PN's of the repeaters, the estimated signal quality of the received signals, or any combination thereof).

Consider claim 16. The method according to claim 1, wherein the position estimate information (PEI) parameters include information which identifies a transmitter type of the location node (abstract, title, ¶: 138, Stein teaches the controller 730 receives the measurements for the base stations and/or GPS satellites, the PN sequences for the base stations, the identifier PN's of the repeaters, the estimated signal quality of the received signals, or any combination thereof).

Consider claim 17. The method according to claim 1, wherein the position determination entity comprises a position determination entity (PDE) operating in a code division multiple access (CDMA) network (abstract, title, ¶: 6, 9, Stein teaches system 100 may be designed to conform to systems such as WCDMA, CDMA 2000, or IS-95 and this system comprises a PDE 130 that receives time measurements and/or identification codes from the terminals and provides control and other information related to position determination).

Consider claim 39. The method according to claim 27, wherein the position determination entity comprises a position determination entity (PDE) operating in a code division multiple access (CDMA) network (abstract, title, ¶: 6, 9, Stein teaches system

100 may be designed to conform to systems such as WCDMA, CDMA 2000, or IS-95 and this system comprises a PDE 130 that receives time measurements and/or identification codes from the terminals and provides control and other information related to position determination).

Consider claim 52. The system according to claim 42, wherein the position determination entity comprises a position determination entity (PDE) operating in a code division multiple access (CDMA) network (abstract, title, ¶: 6, 9, Stein teaches system 100 may be designed to conform to systems such as WCDMA, CDMA 2000, or IS-95 and this system comprises a PDE 130 that receives time measurements and/or identification codes from the terminals and provides control and other information related to position determination).

Consider claim 19. The method according to claim 1, wherein the location node comprises a base station (abstract, title, ¶: 135, Stein teaches a terminal 106x, reading on claimed “mobile station”, receives signals from GPS satellites base stations, and/or repeaters).

Consider claim 59. The system according to claim 42, wherein the location node comprises a base station (abstract, title, ¶: 135, Stein teaches a terminal 106x, reading on claimed “mobile station”, receives signals from GPS satellites base stations, and/or repeaters).

Consider claim 20. The method according to claim 1, wherein the location node comprises a wireless access point (abstract, title, ¶: 135, Stein teaches a terminal 106x,

reading on claimed “mobile station”, receives signals from GPS satellites base stations, and/or repeaters).

Consider claim 60. The system according to claim 42, wherein the location node comprises a wireless access point (abstract, title, ¶: 135, Stein teaches a terminal 106x, reading on claimed “mobile station”, receives signals from GPS satellites base stations, and/or repeaters).

Consider claim 21. The method according to claim 1, wherein the location node comprises a GPS satellite (abstract, title, ¶: 135, Stein teaches a terminal 106x, reading on claimed “mobile station”, receives signals from GPS satellites base stations, and/or repeaters).

Consider claim 61. The system according to claim 42, wherein the location node comprises a GPS satellite (abstract, title, ¶: 135, Stein teaches a terminal 106x, reading on claimed “mobile station”, receives signals from GPS satellites base stations, and/or repeaters).

Consider claim 22. The method according to claim 1, the method further comprising: collecting in the mobile station, position estimate information (PEI) transmitted by a plurality of location nodes; and generating in the mobile station, the PEI parameters based upon the PEI collected from the plurality of location nodes, wherein the PEI parameters include -formation which identifies a location of at least one of the plurality of location nodes (abstract, title, ¶: 135, 138, Stein teaches the RF receiver unit 722 conditions and digitizes the received signal to provide samples to the controller 730 which receives the measurements for the base stations and/or GPS satellites, the PN

sequences for the base stations, the identifier PN's of the repeaters, the estimated signal quality of the received signals, or any combination thereof).

Consider claim 41. The method according to claim 27, wherein the position estimate information (PEI) parameters include information which identifies a location of at least one of a plurality of location nodes with which the mobile station is in communication (abstract, title, ¶: 135, 138, Stein teaches the RF receiver unit 722 conditions and digitizes the received signal to provide samples to the controller 730 which receives the measurements for the base stations and/or GPS satellites, the PN sequences for the base stations, the identifier PN's of the repeaters, the estimated signal quality of the received signals, or any combination thereof).

Consider claim 54. The system according to claim 42, further comprising:

a plurality of location nodes, each transmitting position estimate information (PEI) to the mobile station; and wherein the mobile station generates the PEI parameters based upon the PEI collected from each of the plurality of location nodes, and wherein the PEI parameters include information which identifies a location of at least one of the plurality of location nodes (abstract, title, ¶: 135, 138, Stein teaches the RF receiver unit 722 conditions and digitizes the received signal to provide samples to the controller 730 which receives the measurements for the base stations and/or GPS satellites, the PN sequences for the base stations, the identifier PN's of the repeaters, the estimated signal quality of the received signals, or any combination thereof).

Consider claim 23. The method according to claim 22, wherein each of the plurality of location nodes comprise a different type of transmission entity (abstract, title, ¶: 135,

Stein teaches a terminal 106x, reading on claimed “mobile station”, receives signals from GPS satellites base stations, and/or repeaters).

Consider claim 55. The system according to claim 42, wherein each of the plurality of location nodes comprise a different type of transmission entity (abstract, title, ¶: 135, Stein teaches a terminal 106x, reading on claimed “mobile station”, receives signals from GPS satellites base stations, and/or repeaters).

Consider claim 24. The method according to claim 1, wherein the position estimate information (PEI) comprises a system parameters message (SPM) (abstract, title, ¶: 47, Stein teaches a PN sequence, reading on claimed “SPM”, is used to generate the pilot references and to spread data at the base stations and it is continually repeated to generate a continuous spreading sequence that is then used to spread pilot and traffic data).

Consider claim 56. The system according to claim 42, wherein the position estimate information (PEI) comprises a system parameters message (SPM) (abstract, title, ¶: 47, Stein teaches a PN sequence, reading on claimed “SPM”, is used to generate the pilot references and to spread data at the base stations and it is continually repeated to generate a continuous spreading sequence that is then used to spread pilot and traffic data).

Consider claim 25. The method according to claim 1, wherein the position estimate information (PEI) comprises a standard code division multiple access (CDMA) system parameters message (SPM) (abstract, title, ¶: 47, Stein teaches a PN sequence, reading on claimed “SPM”, is used to generate the pilot references and to spread data

at the base stations and it is continually repeated to generate a continuous spreading sequence that is then used to spread pilot and traffic data).

Consider claim 57. The system according to claim 42, wherein the position estimate information (PEI) comprises a standard code division multiple access (CDMA) system parameters message (SPM) (abstract, title, ¶: 47, Stein teaches a PN sequence, reading on claimed “SPM”, is used to generate the pilot references and to spread data at the base stations and it is continually repeated to generate a continuous spreading sequence that is then used to spread pilot and traffic data).

Consider claim 26. The method according to claim 1, wherein the position estimate information (PEI) is a broadcast message from the location node (abstract, title, ¶: 21, Stein teaches the identification code uniquely associated with each repeater is sent by each repeater within a particular coverage area and the identification cedes comprise PN sequences at defined offsets).

Consider claim 58. The system according to claim 42, wherein the position estimate information (PEI) is a broadcast message from the location node (abstract, title, ¶: 21, Stein teaches the identification code uniquely associated with each repeater is sent by each repeater within a particular coverage area and the identification cedes comprise PN sequences at defined offsets)

Consider claim 32. The method according to claim 27, wherein the position estimate information (PEI) parameters include a pseudo-random noise (PN) code index of the location node (abstract, title, ¶: 143, Stein teaches a RX data processor 822 to recover

the data transmitted by the terminal which may include any combination of measurements, identifier PN's reported by the terminal).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 4, 29, 30 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stein et al. (US 20030008669 A1), and in view of Takeuchi et al. (US 20030050077 A1).

Consider claims 4, 30, 44, Stein discloses everything as applied in claims 1, 27, and 42 above; however he fails to disclose the PEI parameters include latitude and longitude of the location node. The Examiner maintains this feature was well known in the art at the time of invention as taught by Takeuchi.

Takeuchi teaches an invention for finding the position of the mobile communications

terminal (¶: 2). Takeuchi also teaches the overhead information received by the mobile station contains serving base station PN codes and identification signals, position information of the base station (latitude and longitude), usable frequencies, a neighbor list of peripheral base stations, and a network ID (¶: 20). Takeuchi also teaches the terminal information and the acquired peripheral information is reported to the position server PDE (¶: 25). Takeuchi further teaches the PDE calculated the terminal based on the positioning information sent from the terminal MS (¶: 27).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to further require the method and system and PEI parameters, disclosed by Stein, the PEI parameters including the latitude and longitude of the location node, as taught by Takeuchi, to enhance the ability of the PDE to determine the location of the mobile station.

Consider claim 29, Stein discloses everything as applied in claim 27; however, he fails to disclose standing position estimate to the mobile station. The Examiner maintains this feature was well known in the art at the time of invention as taught by Takeuchi.

Takeuchi also teaches the terminal MS receives the positioning result calculated by the position server PDE (¶: 27).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to further require the method and system, disclosed by Stein, to send the position estimate to the mobile station, as taught by Takeuchi, to inform the mobile subscriber of its location.

Claims 7, 33, and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stein et al. (US 20030008669 A1), and in view of Verdonk (US 6330454 B1).

Consider claims 7, 33, and 46, Stein discloses everything as applied in claims 1, 27, and 42 above and he further discloses one or more repeaters 114 may be employed by system 100 to provide coverage for regions that would not otherwise be covered by a base station (¶: 7). Stein also discloses a terminal 106x receives signals from GPS satellites, base stations, and/or repeaters (¶: 135). Stein also discloses the controller 730 receives the measurements for the base stations and/or GPS satellites, the PN sequences for the base stations, the identifier PN's of the repeaters, the estimated signal quality of the received signals, or any combination thereof (¶: 138), reading on claimed, "wherein if the mobile station is not currently in view of the location node." It is inherent that if the mobile station has received the PN sequence from repeater 114 that it is not in view of the base station. However, Stein fails to disclose the PEI parameters include information relating to elapsed time which, the mobile station has been out of view of the location node. The Examiner maintains this feature was well known in the art at the time of invention as taught by Verdonk.

Verdonk teaches the serving MSC may also convert a time-stamp associated with the location information (when the location
information was last recorded) to a normalized time standard such as GST (abstract).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to require the method and system and PEI parameters, disclosed by Stein, and the mobile station not in view of the location node, also disclosed by Stein, that the

PEI parameters include information relating to elapsed time which the mobile station has been out of view of the location node, as taught by Verdonk, in order to provide the most likely location of the mobile unit within the system.

Claims 8, 11, 13, 34, 37, 47 and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stein et al. (US 20030008669 A1), and in view of Soliman (US 6166685).

Consider claims 8, 34, and 47, Stein discloses everything as applied in claims 1, 27, and 42 above and he further discloses one or more repeaters 114 may be employed by system 100 to provide coverage for regions that would not otherwise be covered by a base station (¶: 7). Stein also discloses a terminal 106x receives signals from GPS satellites, base stations, and/or repeaters (¶: 135). Stein also discloses the controller 730 receives the measurements for the base stations end/or GPS satellites, the PN sequences for the base stations, the identifier PN's of the repeaters, the estimated signal quality of the received signals, or any combination thereof (¶: 138), reading on claimed "wherein if the mobile station is not currently in view of the location node." It is inherent that if the mobile station has received the PN sequence from repeater 114 that it is not in view of the base station. However, Stein fails to disclose the PEI parameters include velocity estimation of the mobile station. The Examiner maintains this feature was well known in the art at the time of invention as taught by Soliman. Soliman teaches an invention where the position of the mobile radio unit is tracked as the unit moves about the system (col. 1, lines: 8-9). Soliman also teaches the motion of the mobile station is modeled in order to estimate the current direction and velocity of the

mobile station (col. 4, lines: 1-4).

Therefore, it would have been obvious to .one of ordinary skill in the art at the time of invention to require the method and system and PEI parameters, disclosed by Stein, and the mobile station not in view of the location node, also disclosed by Stein, that the PEI parameters include velocity estimation of the mobile station, as taught by Soliman, in order to enable tiered services to be implemented and used by the mobile station that required the location of the mobile station to be tracked while it is active within the system.

Consider claims 11, 37, and 50, Stein discloses everything as applied in claims 1, 27, and 42 above; however, he fails to disclose the information relating to the proximity of the mobile station relative to the location node comprises a signal-to-interference ratio of the location node. The Examiner maintains this feature was well known in the art at the time of invention as taught by Soliman.

Soliman also teaches infrastructure measurements that are used to perform the position updating include round-trip-delay RTD and signal-to-noise ratio (SNR) measurements (col. 3, lines: 34-35).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to require the method and system, disclosed by Stein, that the information relating to the proximity of the mobile station relative to the location node comprises a signal- to-interference ratio of the location node, as taught by Soliman, in order to estimate the change in position of the mobile station within the system using such measurements.

Consider claim 13, Stein discloses everything as applied in claim 1; however, he fails to disclose the PEI parameters include a direction of motion of the mobile station. The Examiner maintains this feature was well known in the art at the time of invention as taught by Soliman.

Soliman teaches an invention where the position of the mobile radio unit is tracked as the unit moves about the system (col. 1, lines: 8-9). Soliman also teaches the motion of the mobile station is modeled in order to estimate the current direction and velocity of the mobile station (col. 4, lines: 1-4).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to require the method and system and PEI parameters, disclosed by Stein, that the PEI parameters include a direction of motion of the mobile station, as taught by Soliman, in enable a service provider to provide wireless applications to subscribers that would allow the subscriber to obtain child and pet tracking services.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stein et al. (US 20030008669 A1), and in view of Sanmugam (US 5734977).

Consider claim 15, Stein discloses everything as applied in claim 1; however, he fails to disclose the PEI parameters include information that identifies a device type of the mobile station. The Examiner maintains this was well known in the art at the time of invention as taught by Sanmugam.

Sanmugam teaches a method and system for fraud detection and supervision in a cellular radio telephone system (col. 1, lines: 6-7). Sanmugam also teaches several information elements are used to identify and validate a legitimate subscriber (col. 3,

lines: 40-41). Sanmugam also teaches these elements include the MIN, which identifies the service subscription, the EIN, which identifies the mobile station (col. 3 lines: 42-44) and a station class mark (SCM) which designates the transmit power class, mode, and bandwidth for the mobile station (col. 3, lines: 66-67; col. 4 lines: 1-2). Sanmugam further teaches the SCM information is transmitted along with the MIN/ESN at system access to enable the system to identify the operating parameters of the mobile station (col. 15 lines: 14-15).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to require the method and system and PEI parameters, disclosed by Stein, that the PEI parameters include information which identifies a device type of the mobile station, as taught by Sanmugam, to prevent unauthorized use of the location determination services of the serving system.

Claims 18, 40, and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stein et al. (US 20030008669 A1), and in view of Saha et al. (US 6198935)

Consider claims 18, 40, and 53, Stein discloses everything as applied in claims 1, 27, and 42; however, Stein fails to disclose the position determination entity comprises a service mobile location center (SMLC) operating in a global system for the mobile communication (GSM) network. The Examiner maintains this feature was well known in the art at the time of invention as taught by Saha.

Saha teaches a system and method for enhanced time of arrival measurements for mobile station positioning utilizing geographical characteristics of the mobile communications network (col. 1, lines: 10-12). Saha also teaches mobile

telecommunications network 1 comprises a MLC 5 that may serve as a gateway mobile location center (GMLC) 6 which an external location area 7 may access in requesting a determination of a mobile station position (col. 4 lines:2-5) Saha farther teaches the MLC 5 serving mobile station 3 is referred to as the serving mobile station location center (SMLC) (col. 4, lines: 5-7).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to require the method and system and the PDE, disclosed by Stein, the PDE comprising a service mobile location center (SMLC) operating in a global system for the mobile communication (GSM) network, as taught by Saha, to optimally balance accurately determining the position of a mobile station within a mobile telecommunication network against providing wireless speech communication.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DIEGO HERRERA whose telephone number is (571)272-0907. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lester Kincaid can be reached on (571) 272-7922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Diego Herrera/
Examiner, Art Unit 2617

/Lester Kincaid/
Supervisory Patent Examiner, Art Unit 2617